



Employing Quantitative Assessment to Identify Individual with Motor Difficulties

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Introduction

Investigation in identifying individual with motor difficulties in Adapted Physical Education among Malaysian young adolescents is unknown and has not been documented. Somehow, the awareness on the incidence of motor difficulties, commonly called Developmental Coordination Disorder is low. Therefore, data has been collected to explore motor ability level.

Method

Participants: Malaysian young adolescents aged 12 to 15 years (165 boys, 165 girls).

Test Instrument : The McCarron Assessment of Neuromuscular Development (MAND) test (McCarron, 1982).

Result

The mean of NeuroDevelopmental Index (NDI) among boys and girls is shown in Table 1.

Variables	Age (years)	Boys		Girls	
		Mean	SD	Mean	SD
NDI	12	111.2	15.11	108.8	11.93
	13	114.5	14.60	101.7	15.59
	14	108.0	16.31	106.2	17.44
	15	104.9	13.64	91.2	10.10

Overall, the mean Neurodevelopmental Index (NDI) for the Malaysian sample was higher (NDI = 106.7) than that reported by McCarron (1982) in the US normative sample (NDI = 100). Analysis across age and gender indicated that Malaysian young adolescents scored above the mean except girls aged 15 years. The mean score of gross motor average among girls age 15 years old was below than 15 points and showed large discrepancy and therefore precise report may be suitable for this group (McCarron, 1982). Indicating the incidence of motor difficulties.

Implications & Conclusions

Several developed assessment instrument such as the Movement ABC (...), the Test of Gross Motor Development (Ulrich, 200) and the McCarron Assessment of Neuromuscular Development (MAND) (McCarron, 1982) have utilized several qualitative assessments as test items. However, these items need to be transformed into quantitative scales for further analysis. Since individual with motor difficulties are also entail for the Individual Educational Program (IEP), the immediate diagnosis of the qualitative assessment is able to describe these individual informatively. As a basic assessment, employing the qualitative assessment to explore the incidence of motor difficulties among Malaysian children will increase the effectiveness of physical education lesson. As the need to develop a culturally appropriate test is essential, employing qualitative assessment as part of test items is suggested.

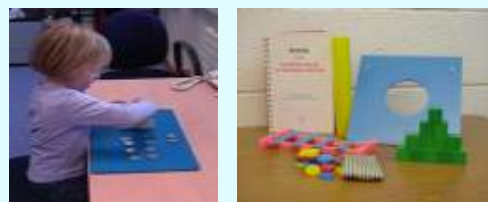


Figure 1: Percentage of participants correctly classified by coordination levels

Behavioural movement of arm, feet, heel toe distance, progression and feet placement are observed, rated and recorded.

		EYES OPEN		EYES CLOSED	
		Right	Left	Right	Left
A	Arm movement 4. Smooth, direct arm movement 2. Somewhat irregular or wavy arm movement 1. Confused and jerky arm movement				
B	Index finger on the extended hand 4. Held steady 2. Slight tremor or swaying 1. Marked tremor or swaying				
C	Contact point 4. Contact point at tip of nose and tip of extended index finger 2. Missed contact point at either tip of nose or tip of index finger 1. Missed contact points at both tip of nose and tip of index finger				
D	Bending of elbow (gradual movement inward) 4. Holds arm fully extended 2. Slight bend at elbow (less than 30°) 1. Noted bend at elbow (more than 30°)				
E	Indenting 4. Lightly touches tip of extended index finger and end of nose 2. Noted pushing of tip of extended index finger or presses in end of nose once or twice 1. Noted pushing in of tip of extended index finger or presses in the end of nose three or more times				
TOTAL					

Table 1: Example of observation on the qualitative assessment and has been transformed into quantitative score

Findings on MAND test among Malaysian adolescents indicating that Malaysian adolescents have higher score suggesting the need for culturally appropriate tests. In order to develop a more comprehensive talent identification test for Malaysian youth, we explored the relationships between general motor ability, specific motor abilities and talent identification as measured by the AIS test.

References

- Australia Sport Commission. (1998). *The National Talent Identification and Development Program*: Australia Sports Commission.
McCarron, L. T. (1982). *McCarron Assessment of Neuromuscular Development*. Dallas: Common Market Press.